NATIONAL SECURITY

Mission Statement

The primary mission of the National Security Division is to develop, test, certify, and deploy technologies to protect the nation's critical infrastructure, environment, and citizens from terrorist actions or threat, or from circumstances that make us vulnerable to threat. This mission statement recognizes that in this post-Soviet era, terrorism is the primary threat to our nation and is the basis for combat missions in Afghanistan and Iraq. Terrorism is increasingly the driver for intelligence and nonproliferation requirements.

Description

The National Security Division accomplishes its mission through program execution in seven business areas: critical infrastructure assurance, homeland security, combat support/demilitarization, nonproliferation/counterproliferation, intelligence, information and communications systems, and counterintelligence and security systems. The Division exploits the INEEL's science-based, applied engineering strengths, historical materials expertise, and representatively complex infrastructure to deliver innovative solutions to a myriad of federal agency, military, and international customers. These solutions address the breadth of security issues facing the nation and the world. The division draws upon the core capabilities throughout the laboratory in this execution and, in turn, uses its capabilities to support other laboratory missions.

This annual work plan describes each of the division's business areas, giving a brief summary of the research, development, engineering and deployment being conducted as well as the primary objectives, business area thrusts, and major customers.

One of three cell sites constructed at the Central Facilities Area as part of the Wireless Testbed

Critical Infrastructure Assurance

The National Security Division is responsible for the INEEL's Critical Infrastructure Assurance Initiative. The initiative's goal is to assist the nation in identifying and understanding its critical infrastructure vulnerabilities, to develop, simulate and test possible solutions, and to help establish appropriate standards and certifications. The Division has established the overall Critical Infrastructure Test Range—consisting of facilities, roads, other transportation infrastructure, power, communications and other systems and facilities—to provide system-level testing. Components of the Test Range, which perform both independently and cooperatively, include:

- Wireless Testbed
- SCADA (Supervisory Control and Data Acquisition) Testbed
- Cyber Security Testbed
- Transportation Testbed
- Physical Security Testbed.

Demonstration of standoff explosive detection at the Idaho Accelerator Center

As an integral part of the overall Initiative, the Division has established several training and certification programs. In collaboration with the Special Program Division of West Desert Test Center at Dugway Proving Ground, Utah, the Division has initiated a comprehensive weapons of mass destruction training program for National Guard Civil Support Teams and military units. The Vulnerability Assessment Center of Excellence will begin conducting certified classes this fiscal year for Department of Energy vulnerability assessment staff throughout the DOE complex. Sponsored by the Department of Energy–Headquarters and the National Nuclear Security Administration, these classes impart a rigor and consistency to the DOE's vulnerability assessment program, thus providing DOE and individual sites with accurate, quantifiable risk and vulnerability information. The Critical Infrastructure Assurance Initiative's major customers include secretarial offices of the Departments of Homeland Security, Energy, and Defense; DOE–Office of Energy Assurance, NNSA, NRC, NCA, and other commercial organizations and federal agencies.

Homeland Security

Long recognized as a leader in the development of technologies to combat terrorism, INEEL has marshaled these considerable resources to tackle homeland security issues.

- Prevent terrorist attacks within the United States—Division scientists and engineers have developed sensors, systems, and technologies to detect weapons of mass destruction. The U.S. military has used the INEEL-developed portable isotopic neutron spectroscopy system for a decade to identify the contents of suspect chemical weapons. Our scientists have developed a method to detect nuclear material in shielded configurations and this technology is currently being tested at U.S. ports of entry. We are optimizing other active interrogation techniques to detect smuggled explosives from a standoff distance of three meters or greater.
- Reduce the vulnerability of the United States to terrorism—The Critical Infrastructure Test Range and its testbeds, in particular the SCADA Testbed, will help identify vulnerabilities, improve the security and robustness of existing systems, and pave the way for design of secure and reliable future systems.
- Minimize the damage and assist in the recovery from terrorist attacks that do occur—The Division is developing the concept of an aggressive approach for infrastructure defense called Infrastructure Consequence Control. Similar to advanced firefighting techniques, implementation of this concept limits damage to infrastructures, reduces recovery time, and mitigates economic impacts to any community facing repercussions from a chemical, biological, or nuclear weapons attack.
- Monitor connections between illegal drug trafficking and terrorism—The Division is conducting research on detecting the illegal movements of currency, using advanced ion mobility spectrometry. Sponsored in part through the U.S. Customs Service, the detection of currency will serve as a powerful tool to help eliminate drug trafficking and sever the connection to terrorism.

INEEL scientists are conducting currency detection research using ion mobility spectrometry.

The major customer for the Homeland Security business area is the secretarial office of the Department of Homeland Security and its supporting agencies. Many of these agencies, such as the U.S. Bureau of Customs and Border Protection, were INEEL National Security Division customers prior to the establishment of the Department of Homeland Security.

Combat Support/Demilitarization

National Security combat support programs, which directly benefit the war fighter, include rapid prototyping of engineered systems as well as research and development. The division is responsible for deployment of sophisticated military mission planning systems, development of advanced command and control systems, and design of military logistics systems for the U.S. Army. The division's programs address national and international demilitarization issues by fielding technologies and supporting policy development. We provide assets and methods to mitigate human harm to the environment and to prevent

Mobile munitions assessment systems

Major customers in the Combat Support/Demilitarization business area include Department of Defense research organizations and the U.S. Air Force, U.S. Army, U.S. Navy, and U.S. Marines.

Nonproliferation/Counterproliferation

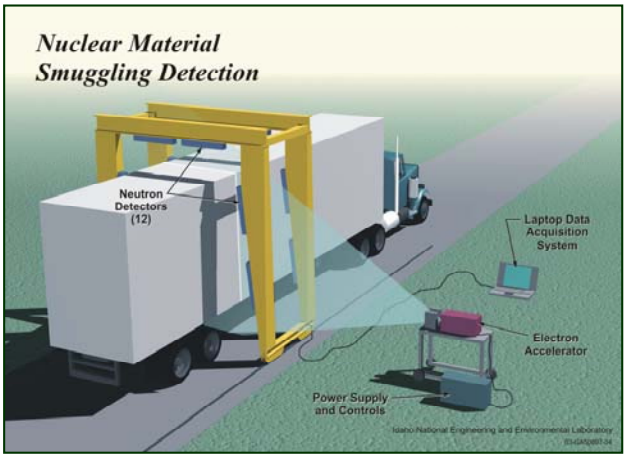
The division's nonproliferation research and development is directed at supporting U.S. efforts to identify and secure nuclear materials and other weapons of mass destruction to prevent their use by terrorists. Counterproliferation R&D focuses on developing materials and technologies that may be used in a preemptive sense to deny, disrupt, delay, or destroy proliferation capabilities. The major thrust in this business area is expanding the active interrogation program and sensor development.

The major customers for this business area include the secretarial offices of the Department of Homeland Security and the Department of Energy.

Intelligence

National Security supports the intelligence community in several strategic areas, including materials development, information operations, chemical analysis, and engineered systems. The division supplies unique, innovative, rapid solutions to meet intelligence community requirements by exploiting our reputation as "out-of-the-box" thinkers that deliver working systems. In harm to people from environmental remediation activities. Current and future thrusts in this business area include:

- Expanding beyond U.S. Army Stockpile and Non-Stockpile Chemical Materiel into other military, national, and international demilitarization markets
- Leveraging expertise and investments (TRIPS, SMC armor program) into products and services for future combat systems.



Pulsed photonuclear assessment is an active interrogation method to detect nuclear material.

INEEL chemist Mason Harrup formulated a solid polymer electrolyte that could revolutionize the battery industry.

addition to the four strategic thrusts in this business area—materials development, information operations, chemical analysis, and engineered systems—we are pursuing multiple complementary programs for the intelligence community (intelligence analysis, range testing, quality assurance planning, battery research, sensor systems, etc.).

Major intelligence community customers include DOE-IN, DIA, NSA, NRO, various Department of Defense, Department of State, and Department of Homeland Security organizations, and others.

Information and Communications

National Security Division researchers and computer engineering experts solve programmatic challenges using emerging advanced information, computing, and communications technologies. Integration of these crosscutting militarily critical technologies allows the division to provide clients with powerful and cost-effective environments to conduct their national security missions.

INEEL engineers are conducting research into communications using unmanned aerial vehicles for the Defense Advanced Research Projects Agency.

Researchers and computer engineering experts apply key INEEL technologies to solutions for both government and commercial clients in areas such as wireless communications, sensor integration, advanced data integration and visualization, enterprise-wide modeling and architecture development, advanced scientific and high-performance computing, modeling, simulation, visualization, scaling, and real-time distributed control systems development. Specific thrusts for this business area include:

- Enhancing wireless communications technologies for national security/emergency preparedness and commercial applications
- Conducting research and development in new collaborative information tools for decision-making, data fusion, and visualization
- Building classified and high-performance computing capabilities to attract and sustain national security clients.

INEEL Counterintelligence partners with the FBI, academic institutions, industry, and other federal agencies in Infragard, an infrastructure security organization.

Major customers for this business area include the Departments of Defense (Armed Forces, Defense Advanced Research Projects Agency), Homeland Security, Justice, Transportation, Commerce (NTIA, FCC) and Energy (NNSA); NCS, FEMA, USSS, the intelligence community (NSA, CIA, DIA, NRO), and commercial organizations (Bechtel, others).

Counterintelligence/Security

The National Security Division also is responsible for counterintelligence functions and various safeguards and security programs, such as facility security design and vulnerability assessment. The purpose of these functions are to deter, detect, and neutralize foreign industrial or intelligence activities directed at or involving INEEL programs, facilities, technology, personnel, sensitive information, or classified matter. These activities establish the INEEL as a leader in vulnerability assessment and threat mitigation. The major thrust in this business area is the Vulnerability Assessment Center of Excellence.

The major customer in this business area is the Department of Energy-Headquarters and the National Nuclear Security Administration.

Projected Business Volume

Major Business Area	FY-04 ($M)
Homeland Security	$3.0
Combat Support/Demilitarization	9.6
Nonproliferation/Counterproliferation	4.3
Intelligence	11.1
Information and Communications	2.5
Critical Infrastructure Assurance	3.5
Counter Intelligence/Security[a]	6.0
Total	**$40.0**

a. Includes $4.5 S&S Programs projection.